installed on a surface of the bed, which confronts the field magnet of the table, and a means for monitoring a position of the table with respect to the bed, wherein said armature windings consist of three armature windings composed of coreless coils each having a substantially rectangular flat shape, said coils being arranged in juxtaposition in the lengthwise direction of movement of the table, each of said armature windings being connected to receive a respective phase of a three-phase current, so that the three-phase current flowing in the armature windings interacts with magnetic flux created by the field magnet to produce an electromagnetic force to drive the table along the bed in a sliding manner with a desired position control, wherein the field magnet is made of a permanent magnet of rare earth and has five poles for the three armature windings, and wherein the table fits on the bed in the lengthwise direction of movement of the table by virtue of a linear motion guide unit, which is composed of track rails provided on the bed and a slider mounted on the bed for sliding movement, the slider having the table thereon.

2. (Amended) A sliding means constructed as recited in claim 1, wherein the position monitoring means is an optical encoder composed of an optical linear scale secured on the table and a sensor element installed in the bed in opposition to the optical linear scale.

3. (Amended) A sliding means constructed as recited in claim 1, wherein the field magnet is at most equal in height to the linear motion guide unit while the armature windings are accommodated in a recess formed in the bed between the track rails.

a2

7 8. (Amended) A sliding means constructed as recited in claim 1, wherein the armature windings are attached to a coil board that is secured to the bed to close a recess formed in the bed, and the armature windings are fixed in juxtaposition to a surface of the coil board, which is exposed to the recess.

8 10. (Amended) A sliding means constructed as recited in claim 1, wherein each of the armature windings is composed of a resinous core molded in a form of rectangle, and turns wound around the core.

9 11. (Amended) A sliding means constructed as recited in claim 1, wherein the table is provided with an origin mark to define an origin of the table, while the bed is made with a limit sensor to detect the poles at forward and aft ends of the field magnet and a before-the-origin sensor to monitor the origin mark, both the sensors being placed at forward and aft ends of the bed along the moving direction of the table.

10 12. (Amended) A sliding means with built-in moving-magnet linear motor, comprising a bed of magnetic material, a table of magnetic material arranged movable lengthwise of the bed in a sliding manner with respect to the bed, a field magnet arranged on a surface of the table, which opposes to the bed, the field magnet having unlike poles alternating in polarity in a moving direction of the table, three armature windings installed on a surface of the bed, which confronts the field magnet of the table, and a means for monitoring a position of the table with respect to the bed, wherein each of the three armature windings is provided to carry a respective phase of a three-phase current, so that the three-phase current flowing

in the armature windings interacts with magnetic flux created by the field magnet to produce an electromagnetic force to drive the table along the bed in a sliding manner with a desired position control, wherein the bed has an end block at any one of the forward and aft ends thereof in the moving direction of the table, and has a connector block at another of the forward and aft ends, the connector block having an electric power cord to be connected to the armature windings and a sensor line to be connected to the position monitoring means, and elastic stoppers are mounted on the blocks, each to each block, to buffer collision with the table.

a2 cancel'd.

REMARKS

The Examiner's action dated July 31, 2002, has been received, and its contents carefully noted.

The indication of allowability of claim 12 is noted with appreciation. In view thereof, claim 12 has been placed in independent form by incorporation therein of all of the subject matter of original claim 1. The amendments made to claim 12 have been drafted to provide proper antecedent basis for the "three armature windings".

In response to the rejection presented in section 1 of the action, claim 1 has been similarly amended to provide antecedent basis for the "three armature windings". Claim 1 has been further amended to more clearly define the contribution of the invention over the prior art and to include the subject matter of original claims 2 and 4, which have themselves been cancelled, and several of the dependent claims have been amended to place them in better form.

The rejection of claims 1, 3-9 and 11 as anticipated by Chitayat is respectfully traversed for the reason that